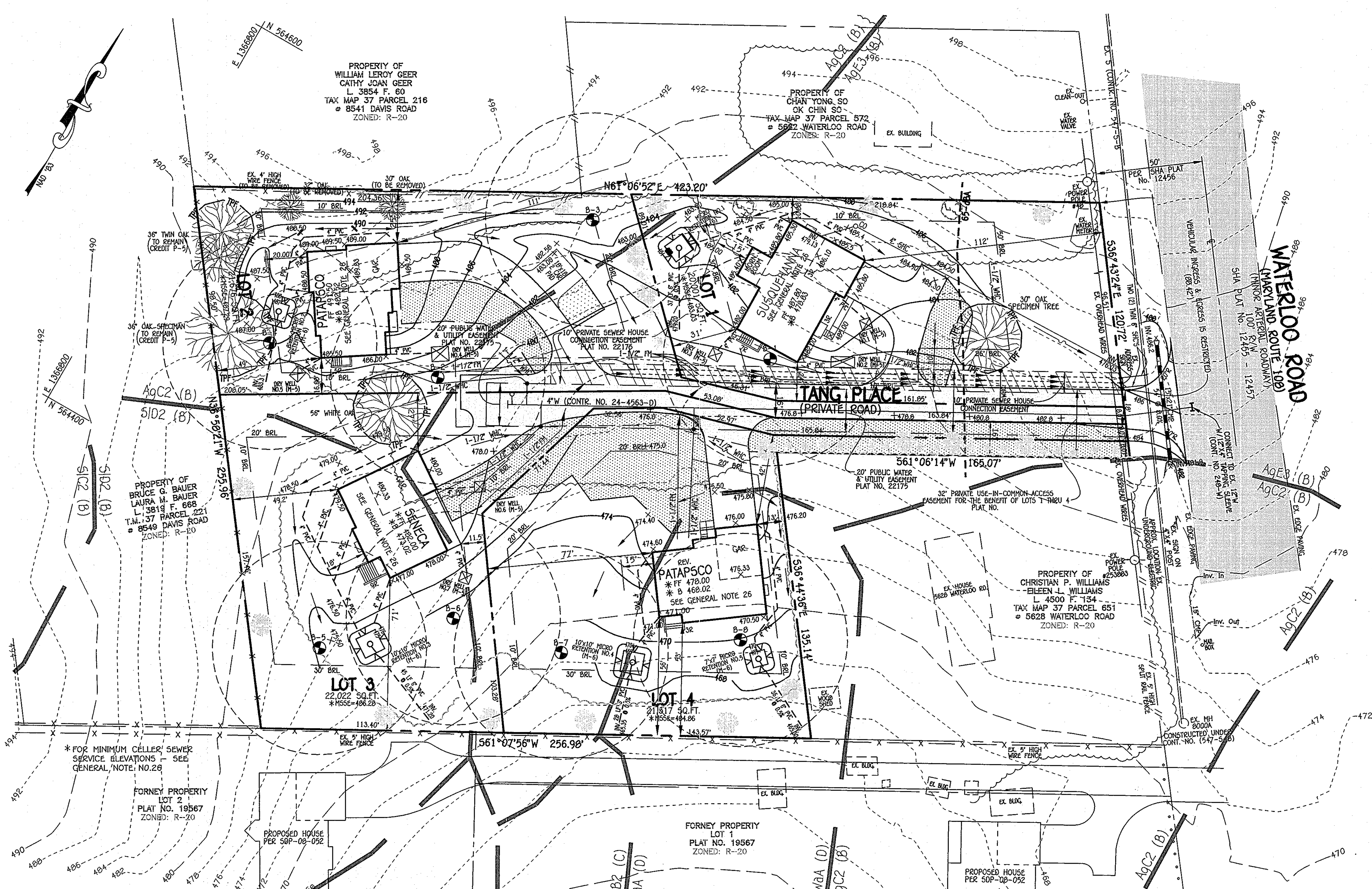


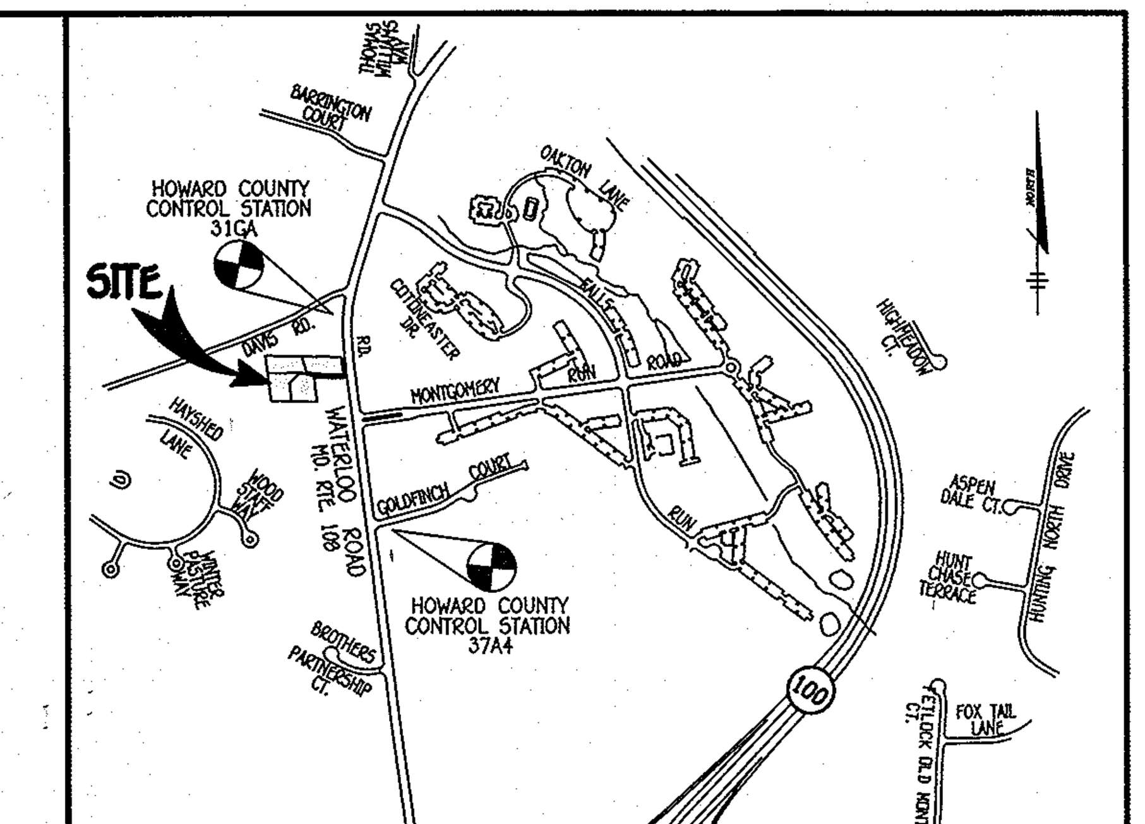
LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	PROPOSED CONTOUR 2' INTERVAL
+362.2	SPOT ELEVATION
WOB	WALKOUT BASEMENT
	DRAINAGE FLOW
	ROOF LEADER (UNDERGROUND PVC)
	PROPOSED LANDSCAPING PER THIS PLAN
	PROPOSED LANDSCAPING PER F-08-066
	EXISTING TREELINE
	TREES TO BE SAVED
	10' SHC EASEMENT
	SPECIMEN TREE TO REMAIN
	NON-ROOFTOP DISCONNECTION
	USE-IN-COMMON DRIVEWAY EASEMENT
	LIMIT OF DISTURBANCE

BENCH MARKS

T.P. 31GA ELEV. 511.64
N 172,189.7272 SFT.
E 1,367,067.6420 SFT.
LOC.: RTE. 108 0.3 MI. SOUTH RTE. 104

T.P. 37A4 ELEV. 437.215
N 563,835.9461 SFT.
E. 1,367,971.6304 SFT.
LOC.: RTE 108 E OF GOLDFINCH CT.

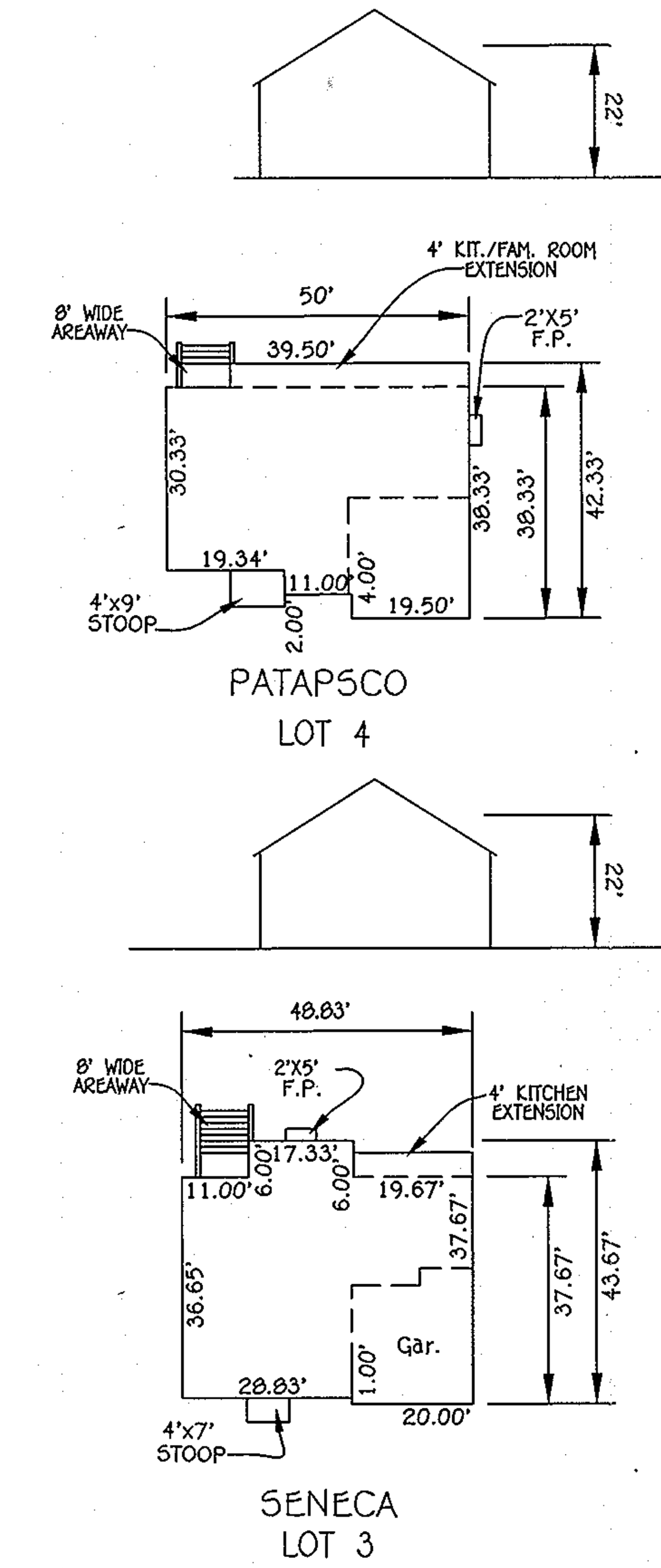


VICINITY MAP

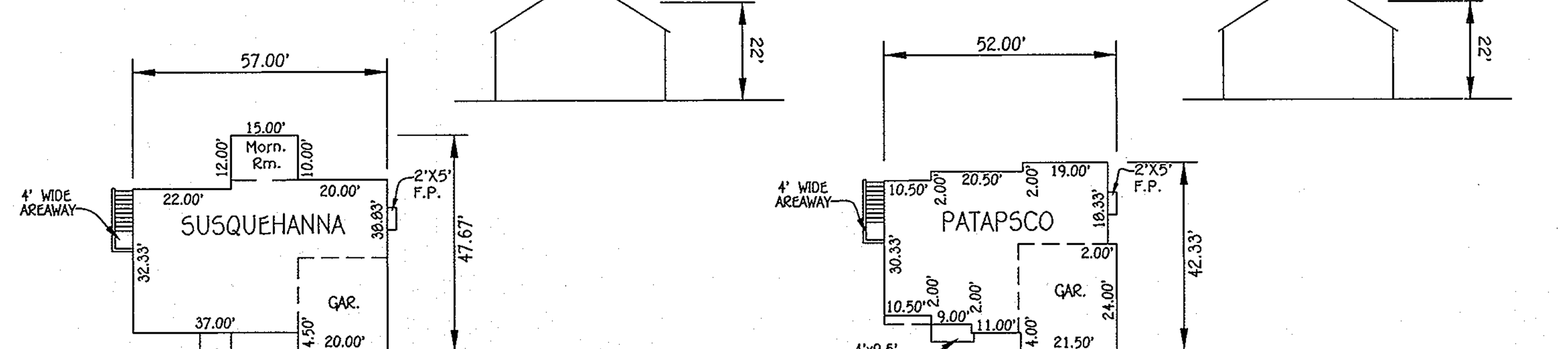
SCALE: 1" = 2000'
ADC MAP COORDINATE NO. 4936
PAGE 23, GRID A-6

GENERAL NOTES

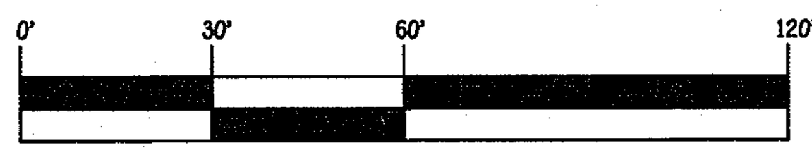
1. SUBJECT PROPERTY ZONED R-20 PER THE COMPREHENSIVE ZONING PLAN DATED 2/2/04 AND THE COMP LITE ZONING AMENDMENTS EFFECTIVE 7/28/06.
2. TOTAL AREA OF SITE: 1.9517 ACRES
3. TOTAL NUMBER OF LOTS SUBMITTED: 4 SFD.
4. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE WORKING DAYS PRIOR TO START OF WORK.
5. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
6. THIS SITE IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY AND FIELD RUN TOPOGRAPHY PERFORMRD ON OR ABOUT ABOUT OCTOBER, 2007 BY FISHER. COLLINS AND CARTER, INC..
7. LOT AREA IS MORE OR LESS (+ OR -).
8. PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. PUBLIC WATER AND SEWER IS UTILIZED IN THIS SUBDIVISION.
9. PREVIOUS DEPARTMENT OF PLANNING AND ZONING FILE NUMBERS: SEWER-547-5-B, 248-W, WP-11-050, WP-09-220, WP-12-083, CONTR. NO. 24-4563-D AND F-08-066.
10. HORIZONTAL AND VERTICAL CONTROL DATUM IS BASED ON NAD 83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS.
    HOWARD COUNTY MONUMENT 31GA N 564,925.7967 E 1,367,067.6420 ELEV. 511.64
    HOWARD COUNTY MONUMENT 37A4 N 563,835.6304 E 1,367,971.6304 ELEV. 437.215
11. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVELOPER'S EXPENSE.
12. ALL WATER HOUSE CONNECTIONS SHALL BE 1-1/2" IN SIZE WITH A 1" OUTSIDE METER SETTING.
13. SEWER HOUSE CONNECTION ELEVATIONS SHOWN ARE LOCATED AT THE PROPERTY LINE.
14. FOR DRIVEWAY ENTRANCE DETAILS REFER TO HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD DETAIL R.6.05.
15. DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS:
    A.) WIDTH - 12' (16' SERVING MORE THAN ONE RESIDENCE).
    B.) SURFACE - 6" OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING (1-1/2" MIN.)
    C.) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND 45 FOOT TURNING RADIUS.
    D.) STRUCTURES - (BRIDGES/CULVERTS) CAPABLE OF SUPPORTING 25 GROSS TONS (H25-LOADING)
    E.) DRAINAGE ELEMENTS - CAPABLE OF SAFETY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
    F.) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
16. TRAFFIC REPORT WAS PREPARED BY THE TRAFFIC GROUP AND WAS APPROVED UNDER S-05-010.
17. NO CEMETERIES EXIST ON THIS SITE BASED ON A VISUAL SITE VISIT AND ON AN EXAMINATION OF THE HOWARD COUNTY CEMETERY INVENTORY MAP.
18. NO 100 YEAR FLOOD PLAIN EXISTS ON SITE. NO GRADING , REMOVAL OF VEGATATIVE COVER OR TREES PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS.
19. THIS PLAN IS IN COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL 45-2003 AND THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL 75-2003. DEVELOPMENT AND THE JULY 28, 2006 UPDATE OF THE HOWARD COUNTY ZONING REGULATIONS. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION, OR BUILDING/GRADING PERMIT.
20. IN ACCORDANCE WITH SECTION 128 OF THE HOWARD COUNTY ZONING REGULATIONS, BAY WINDOWS, CHIMNEYS OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACKS, PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACKS.
21. STORMWATER MANAGEMENT REQUIREMENTS FOR LOTS 1 THRU 4 WILL BE MET USING ENVIRONMENTAL SITE DESIGN TO THE MAXIMUM EXTENT POSSIBLE IN ACCORDANCE WITH THE MARYLAND STORMWATER DESIGN MANUAL, VOLUME I & II, EFFECTIVE IN MAY 2010. THE PROPOSED PRACTICES WILL BE LOCATED ON THE INDIVIDUAL LOTS AS FOLLOWS:
    LOT 1: MICRO-BIORETENTION (M-6) AND DRYWELLS (M-5) FOR THE PROPOSED HOUSE.
    LOT 2: MICRO-BIORETENTION (M-6) AND DRYWELLS (M-5) FOR THE PROPOSED HOUSE.
    LOT 3: MICRO-BIORETENTION (M-6) AND DRYWELLS (M-5) FOR THE PROPOSED HOUSE.
    LOT 4: MICRO-BIORETENTION (M-6) FOR THE PROPOSED HOUSE.
    DRIVEWAYS: NON-ROOFTOP DISCONNECTION
    THESE PRACTICES SHALL BE PRIVATELY OWNED AND MAINTAINED IN ACCORDANCE WITH INDIVIDUAL DECLARATIONS OF COVENANTS.
22. THE FOREST CONSERVATION REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION EASEMENT ACT FOR THIS SUBDIVISION WERE FULLFILLED BY PROVIDING A FEE IN LIEU PAYMENT OF $27,442.80 BASED ON 0.84 ACRES (REFORESTATION) X 43,560 SQ. FT./ACRE X $0.75/ SQ. FT. UNDER F-08-006.
23. THE USE-IN-COMMON DRIVEWAY MAINTENANCE AGREEMENT FOR LOTS 1 THRU 4 HAS BEEN RECORDRED IN THE HOWARD COUNTY LAND RECORDS OFFICE SIMULTANEOUSLY THE RECORD PLAT F-08-066, PLAT NO. 22175.
25. LANDSCAPING FOR LOTS 1 THRU 4 HAS BEEN PROVIDED IN ACCORDANCE WITH SECTION 16.124 OF THE. HOWARD COUNTY CODE AND LANDSCAPE MANUAL. SURETY FOR 16 SHADE TREES/$300 EA. AND 17 EVERGREEN TREES/ $150 EA.-TOTALING $7,350.00 HAS BEEN POSTED WITH DEVELOPER'S AGREEMENT FOR WATER AND SEWER PER F-08-066. THE TWO EXISTING TREES THAT HAD BEEN CREDITED ALONG P-6 HAVE REMOVED BY GRADING SHOWN ON THIS PLAN AND SHALL BE REPLACED BY TWO SHADE TREES SHOWN IN THE LANDSCAPING PLANT LIST. A SURETY BOND IN THE AMOUNT OF $600.00 ($300.00 EA.) SHALL BE POSTED WITH THE BUILDER'S GRADING PERMIT FOR LOT 1.
26. THE REQUEST FOR A WAIVER OF BASEMENT GRAVITY SEWER SERVICE TO LOT 1 WAS APPROVED ON MAY 29, 2008. BASEMENT SEWER SERVICE IS TO BE PROVIDED BY A PRIVATE ON-SITE PUMP. A WAIVER OF GRAVITY SEWER SERVICE FOR LOTS 2 THRU 4 WAS APPROVED ON MAY 29, 2008. SEWER SERVICE TO BE PROVIDED BY A PRIVATE ON-SITE PUMP. GRINDER PUMPS SHALL BE LOCATED IN THE BASEMENT.
28. EXISTING UTILITIES ARE BASED ON PUBLIC WATER CONTRACT NO. 248-W AND PUBLIC SEWER CONTRACT NO. 547-5.
29. A WETLAND REPORT WAS PREPARED BY T.E. SCOTT & ASSOCIATES DATED JUNE 26, 2007. NO NON-TIDAL WETLANDS EXIST WITHIN THE LIMITS OF THIS SUBDIVISION.
30. NO HISTORIC STRUCTURES OR CEMETERIES EXIST ON THIS SITE.
31. THERE ARE NO STEEP SLOPES ON-SITE, AS INDICATED BY THE EXISTING TOPOGRAPHY SHOWN ON THIS PLAN.
32. A PRIVATE RANGE OF ADDRESS SIGN SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPER/OWNER'S EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-2430 FOR DETAILS AND COST ESTIMATE. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS ARE TO BE INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON 2" GALVANIZED STEEL, PERFORATED (QUICK PUNCH), SQUARE TUBE POST (14 GAUGE INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE STEEL TUBE SLEEVE (12 GAUGE)-3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO QUICK PUNCH HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
33. A FEE-IN LIEU OF $3,418.00 WAS PAID ON OCTOBER 24, 2011, UNDER F-08-066 FOR THE ROAD (SIDEWALK) IMPROVEMENTS REQUIRED UNDER SECTION 16.134(c) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
34. FOR THE FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE WILL BE PROVIDED TO THE JUNCTION OF FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY AND NOT ONTO THE PIPESTEM LOT DRIVEWAY.



TYPICAL HOUSES



TYPICAL HOUSES



SCALE: 1" = 30'

THE PURPOSE OF THIS REVISED SITE DEVELOPMENT PLAN IS TO SHOW REVISED HOUSE ADDITIONS AND GRADING ON LOTS 1 AND 2, ADD HOUSE TYPE FOR LOT 1, SHOW SHA IMPROVEMENTS MD. RTE. 108 AND ADD SHC'S-LOTS 1 THRU 4

SHEET INDEX CHART

SHEET	DESCRIPTION
1	SITE DEVELOPMENT & LANDSCAPE PLAN
2	SEDIMENT AND EROSION CONTROL PLAN
3	SEDIMENT/EROSION CONTROL NOTES & DETAILS
4	STORMWATER MANAGEMENT & LANDSCAPE NOTES AND DETAILS

LANDSCAPING PLANT LIST

QTY.	KEY	NAME	SIZE
2		QUERCUS RUBRA/RED OAK	2 1/2" - 3" CALIPER FULL CROWN, B&B

*REFERENCE GENERAL NOTE 25 FOR LANDSCAPING SURETY AMOUNT.

MINIMUM LOT SIZE CHART

LOT NO.	GROSS AREA	PIPESTEM AREA	MINIMUM LOT SIZE
2	21,676 SQ.FT.	1,676 SQ.FT.	20,000 SQ.FT.
3	22,022 SQ.FT.	2,007 SQ.FT.	20,015 SQ.FT.
4	21,317 SQ.FT.	1,316 SQ.FT.	20,001 SQ.FT.

ADDRESS CHART

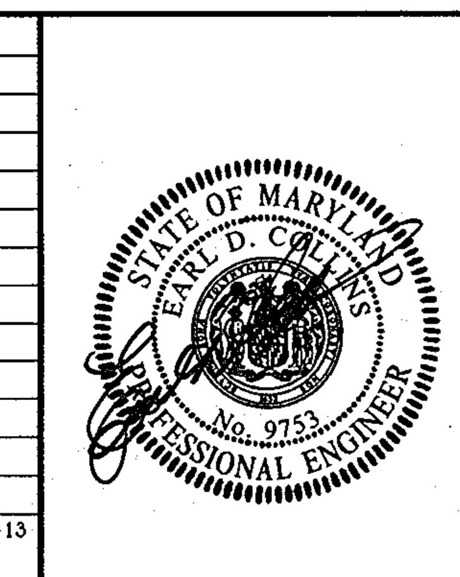
LOT NUMBER	STREET ADDRESS
1	5502 TANG PLACE
2	5506 TANG PLACE
3	5509 TANG PLACE
4	5505 TANG PLACE

SITE ANALYSIS DATA CHART

A. TOTAL PROJECT AREA: 1.9517 ACRES OR 85,016 SQUARE FEET.
B. AREA OF SUBMISSION: 1.9517 ACRES OR 85016 SQUARE FEET.
C. LIMITS OF DISTURBANCE: 1.2760 ACRES OR 55,582 SQUARE FEET.
D. PRESENT ZONING DESIGNATION: R-20.
E. PROPOSED USES FOR SITE: RESIDENTIAL SINGLE FAMILY DETACHED
F. APPLICABLE OPZ FILE REFERENCES: F-08-066, WP-12-083, WP-11-050, WP-09-220
G. NUMBER OF UNITS ALLOWED: 4
H. NUMBER OF UNITS PROPOSED: 4
J. OPEN SPACE & RECREATION OPEN SPACE: A FEE-IN -LIEU WAS PAID ($4500.00) WITH F-08-066.
I. PARKING-2 PARKING SPACES ARE REQUIRED PER UNIT AND .5 SPACES PER UNIT FOR OVERFLOW (PER TABLE 2.11 IN DESIGN MANUAL NO. 3). ALL PARKING WILL BE PROVIDED WITHIN THE GARAGES AND DRIVEWAYS ON EACH INDIVIDUAL LOT.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

NO.	REVISION	DATE
1	REV. HSE AND GRD LOTS 1 AND 2, ADD HOUSE TYPE, SHOW SHA IMPROVEMENTS-MD RTE-108 AND ADD SHC'S-LOTS 1 THRU 4	10-02-13



ENGINEER'S CERTIFICATE

"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Signature of Engineer EARL D. COLLINS 10.23.13 Date

BUILDER/DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan, for sediment and erosion control and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Signature of Developer 10/23/13 Date

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 9753, EXPIRATION DATE: 2/28/14.

EARL D. COLLINS 10.23.13 DATE

BUILDER

MR. TIM BURKARD C/O
PATAPSCO BUILDERS, LLC
5300 DORSEY HALL DRIVE
SUITE 120
ELLICOTT CITY, MARYLAND 21042
240-375-1052

OWNER/DEVELOPER

MR. KHANH Q. LY
2470 TRAILING IVY WAY
BUFORD, GA.30519
ARKHANH@BELLSOUTH.COM
701-841-2409

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development 11-19-13 Date
Chief, Development Engineering Division 11.12.13 Date
Director - Department of Planning and Zoning 11/19/13 Date

PROJECT	SECTION	LOT NO.
TANG PROPERTY	N/A	1 THRU 4

PLAT	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
22175	1	R-20	37	6	606605

REVISED
SITE DEVELOPMENT & LANDSCAPE PLAN

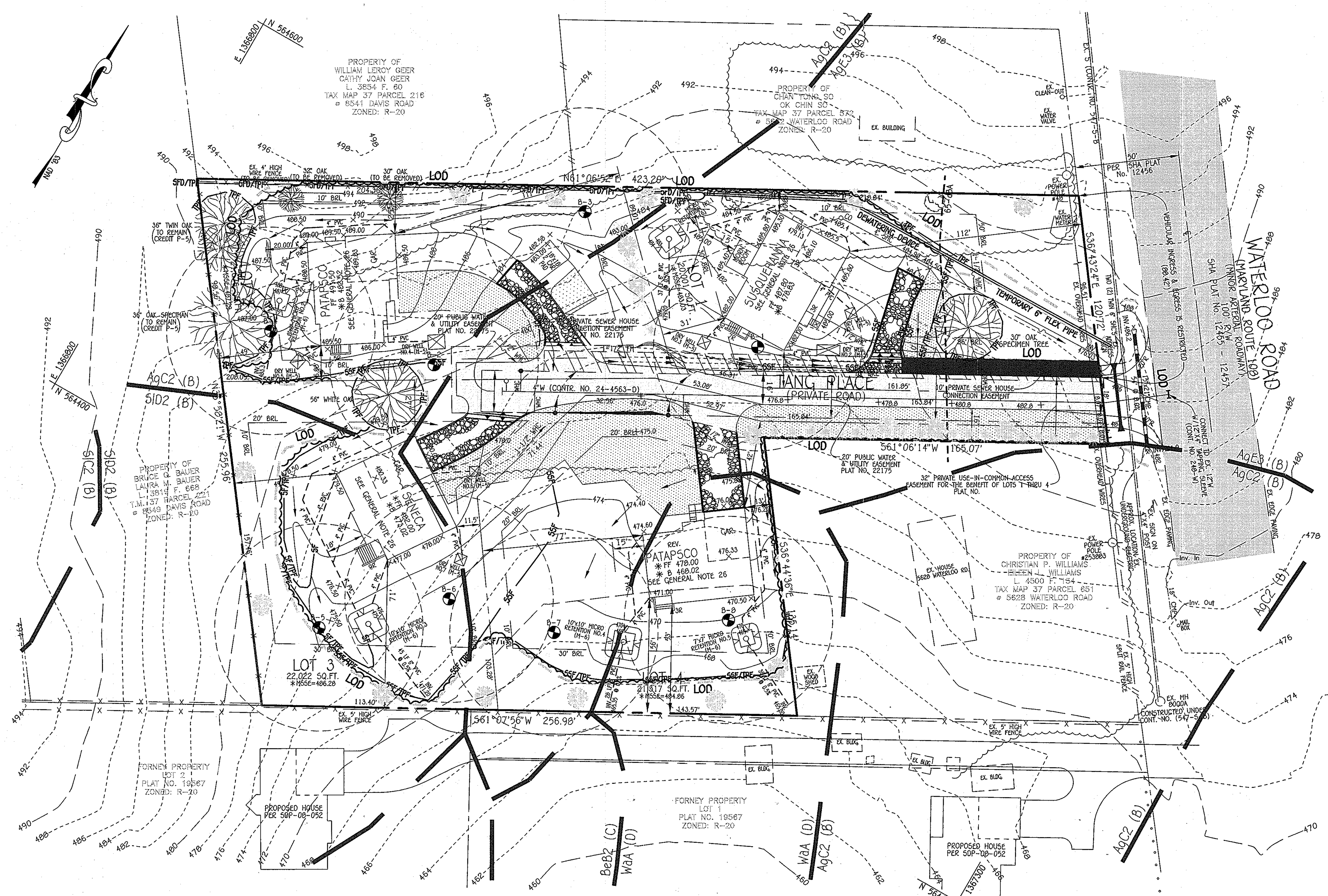
SINGLE FAMILY DETACHED

TANG PROPERTY

LOTS 1 THRU 4
PLAT NO. 22175

TAX MAP NO.: 37 PARCEL NO.: 217 GRID NO.: 1
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: OCTOBER, 2013

SDP 13-025



LEGEND

SYMBOL	DESCRIPTION
- - - - - - -	EXISTING CONTOUR 2' INTERVAL
————	PROPOSED CONTOUR 2' INTERVAL
+362.2	SPOT ELEVATION
WOB ▷	WALKOUT BASEMENT
—SF—SF—	SILT FENCE
—SSF—SSF	SUPER SILT FENCE
LOD	LIMIT OF DISTURBANCE
—TPF—TPF—	TREE PROTECTION FENCE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

NO.	REVISION	DATE
1	REV. HSE AND GRD LOTS 1 AND 2, ADD HOUSE TYPE, SHOW SHA IMPROVEMENTS-MD RTE-108 AND ADD SHC'S-LOTS 1 THRU 4	10-02-13

STATE OF MARYLAND EARL D. COLLINS No. 9753 PROFESSIONAL ENGINEER

ENGINEER'S CERTIFICATE

"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Signature of Engineer EARL D. COLLINS — Date 10.23.13

BUILDER/DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan, for sediment and erosion control and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Signature of Developer — Date 10/23/13

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard Soil Conservation District — Date 10/24/13

BUILDER

MR. TIM BURKARD C/O
PATAPSCO BUILDERS, LLC
5300 DORSEY HALL DRIVE
SUITE 120
ELLICOTT CITY, MARYLAND 21042
240-375-1052

OWNER/DEVELOPER

MR. KHANH Q. LY
2470 TRAILING IVY WAY
BUFORD, GA.30519
ARKHANH@BELLSOUTH.COM
701-841-2409

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — Date 11-19-13
Chief, Development Engineering Division — Date 11.12.13
Director - Department of Planning and Zoning — Date 11/19/13

PROJECT			SECTION		LOT NO.
TANG PROPERTY			N/A		1 THRU 4
PLAT	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
22175	1	R-20	37	6	606605

REVISED SEDIMENT & EROSION CONTROL PLAN

SINGLE FAMILY DETACHED

TANG PROPERTY

LOTS 1 THRU 4

PLAT NO. 22175

TAX MAP NO.: 37 PARCEL NO.: 217 GRID NO.: 1
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: OCTOBER, 2013
SHEET 2 OF 4

SDP 13-025

20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION DEFINITION

Using vegetation as cover for barren soil to protect it from forces that cause erosion.

PURPOSE

Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration 0(up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 – VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation
   i. Install erosion and sediment control structures (either temporary of permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
   ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
   iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.

B. Soil Amendments (Fertilizer and Lime Specifications)
   i. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
   ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.
   iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98–100% will pass through a #20 mesh sieve.
   iv. Incorporate lime and fertilizer into the top 3–5" of soil by disking or other suitable means.

C. Seedbed Preparation
   i. Temporary Seeding
      a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
      b. Apply fertilizer and lime as prescribed on the plans.
      c. In corporate lime and fertilizer into the top 3–5" of soil by disking or other suitable means.
   ii. Permanent Seeding
      a. Minimum soil conditions required for permanent vegetative establishment:
         1. Soil pH shall be between 6.0 and 7.0.
         2. Soluble salts shall be less than 500 parts per million (ppm).
         3. The soil shall contain less than 40% clay, but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedezas is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
         4. Soil shall contain 1.5% minimum organic matter by weight.
         5. Soil must contain sufficient pore space to permit adequate root penetration.
         6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
      b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3–5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
      c. Apply soil amendments as per soil test or as included on the plans.
      d. Mix soil amendments into the top 3–5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1–3" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.

D. Seed Specifications
   i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.

   Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
   ii. Inoculant – The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°–80° F. can weaken bacteria and make the inoculant less effective.

E. Methods of Seeding
   i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker seeder.
      a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous); 200 lbs/ac; K20 (potassium): 200 lbs/ac.
      b. Lime – use only ground agricultural limestone, (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
      c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
   ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
      a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
      b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
   iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
      a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
      b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

F. Mulch Specifications (In order of preference)
   i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
   ii. Wood Cellulose Fiber Mulch (WCFM)
      a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
      b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
      c. WCFM, including dye, shall contain no germination or growth inhibiting factors.
      d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
      e. WCFM material shall contain no elements or compounds at concentration levels that will be phytol-toxic.
      f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm. , diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.

   Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

G. Mulching Seeded Areas – Mulch shall be applied to all seeded areas immediately after seeding.
   i. If grading is completed outside of the seeding season, mulch along shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
   ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
   iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.

H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
   i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.
   ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
   iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders – such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
   iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

I. Incremental Stabilization – Cut Slopes
   i. All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.
   ii. Construction sequence (Refer to Figure 3 below):
      a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
      b. Perform Phase 1 excavation, dress, and stabilize.
      c. Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as necessary.
      d. Perform final phase excavation, dress and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions int he operation of completing the operation out of the seeding season will necessitate the application of temporary stabilization.

J. Incremental Stabilization of Embankments – Fill Slopes
   i. Embankments shall be constructed in lifts as prescribed on the plans.
   ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15", or when the grading operation ceases as prescribed in the plans.
   iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.
   iv. Construction sequence: Refer to Figure 4 (below).
      a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slope silt fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.
      b. Place Phase 1 embankment, dress and stabilize.
      c. Place Phase 2 embankment, dress and stabilize.
      d. Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of and placement of topsoil (if required) grading and permanent seed and mulch. any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

SEDIMENT CONTROL NOTES

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7) SITE ANALYSIS:

TOTAL AREA OF SITE	1.9517 ACRES
AREA DISTURBED	1.2760 ACRES
AREA TO BE ROOFED OR PAVED	0.4087 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.8673 ACRES
TOTAL CUT	363 CU.YDS.
TOTAL FILL	400 CU.YDS.

   OFFSITE WASTE/BORROW AREA LOCATION TO BE DETERMINED
   STOCKPILING WILL NOT BE PERMITTED ON SITE
8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9) ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGHTS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

SECTION 3 – PERMANENT SEEDING

Seeding grass and legumes to establish groung cover for a minimum of one year on disturbed areas generally receiving low maintenance.

A. Seed mixtures – Permanent Seeding

i. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Permanent Seeding Summary below, along with application rates and seeding dates. Seeding depths can be estimated using Table 26. If this summary is not put on the construction plans and completed, then Table 25 must be put on the plans. Additional planting specifications for exceptional sites such as shorelines, streambanks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-SCS Techinical Field Office Guide, Section 342 – Critical Area Planting. For special lawn maintenance areas, see Sections IV Sod and V Turfgrass.

ii. For sites having disturbed area over 5 areas, the rates shown on this table shall be deleted and the rates recommended by the soil testing agency shall be written in.

iii. For areas receiving low maintenance, apply ureaform fertilizer (46-0-0) at 3 1/2 lbs/1000 sq. ft. (150 lbs/ac), in addition to the above soil amendments shown in the table below, to be performed at the time of seeding.

Seed Mixture (Hardiness Zone 6b) From Table 25					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	
3	TALL FESCUE (85%) PERENNIAL RYE GRASS (10%) KENTUCKY BLUEGRASS (5%)	125 15 10	3/1 – 5/15, 8/15 – 10/15	1" – 2"	90 lb/ac (2.0 lb/ 1000sf)	175 lb/ac (4 lb/ 1000sf)	175 lb/ac (4 lb/ 1000sf)	2 tons/ac (100 lb/ 1000sf)
10	TALL FESCUE (80%) HARD FESCUE (20%)	120 30	3/1 – 5/15, 8/15 – 10/15	1" – 2"				

STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Definition

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

1. This practice is limited to areas having 2:1 or flatter slopes where:
   a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
   b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
   c. The original soil to be vegetated contains material toxic to plant growth.
   d. The soil is so acidic that treatment with limestone is not feasible.

II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.

II. Topsoil Specifications – Soil to be used as topsoil must meet the following:
   i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 11/2" in diameter.
   ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
   iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4–8 tons/acre (200–400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

II. For sites havinc, disturbed areas under 5 acres:
   i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization – Section I – Vegetative Stabilization Methods and Materials.

III. For sites having disturbed areas over 5 acres:
   i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
      a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be perscribed to raise the pH to 6.5 or higher.
      b. Organic content of topsoil shall be not less than 1.5 percent by weight.
      c. Topsoil havina soluble salt content greater than 500 parts per million shall not be used.
      d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

   Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appopriate approval authority, may be used in lieu of natural topsoil.
   ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization – Section I – Vegetative Stabilization Methods and Materials.

V. Topsoil Application
   i. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
   ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" – 8" higher in elevation.
   iii. Topsoil shall be uniformly distributed in a 4" – 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seedine can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
   iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

VI. Alternative for Permanent Seeding – Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
   i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
      a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
      b. Composted sludge shall contain at least I percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
      c. Composted sludge shall be applied at a rate of I ton/1,000 square feet.
   iv. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

   References: Guideline Specifications, Soil Preparation and Sodding,. MD-VA, Pub. #I, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

SEQUENCE OF CONSTRUCTION

1.	OBTAIN GRADING PERMIT	7 DAYS
2.	INSTALL SEDIMENT AND EROSION CONTROL DEVICES AND TREE PROTECTION FENCE	7 DAYS
3.	CLEAR AND GRUB TO LIMITS OF DISTURBANCE	4 DAYS
4.	INSTALL TEMPORARY SEEDING	2 DAYS
5.	CONSTRUCT BUILDINGS	60 DAYS
6.	INSTALL SWM	4 DAYS
7.	FINE GRADE SITE, PERMANENT SEEDING AND LANDSCAPE	14 DAYS
8.	REMOVE SEDIMENT CONTROL DEVICES AS UPLAND AREAS ARE STABILIZED AND PERMISSION IS GRANTED BY SEDIMENT CONTROL INSPECTOR.	7 DAYS

SECTION 2 – TEMPORARY SEEDING

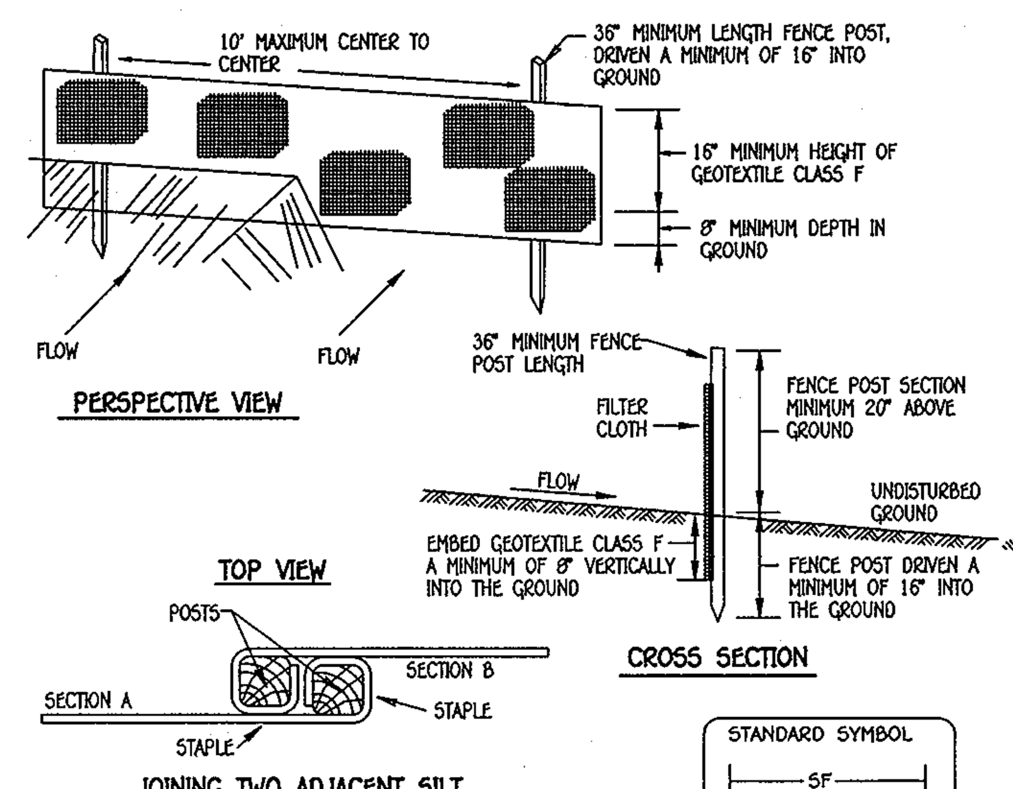
Vegetation – annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, Permanent Seeding is required.

A. Seed mixtures – Temporary Seeding

i. Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Temporary seeding summary below, along with application rates, seeding dates and seeding depths. If this summary is not put on the plans and completed, then Table 26 must be put on the plans.

ii. For sites having soil tests performed, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in. Soil tests are not required for Temporary Seeding.

Seed Mixture (Hardiness Zone 6b). From Table 26					Fertilizer Rate (10-10-10)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
1	BARLEY OATS RYE	122 96 140	3/1 – 5/15, 8/15 – 10/15	1" – 2" 1" – 2" 1" – 2"	600 lb/ac (15 lb/1000sf)	2 tons/ac (100 lb/1000sf)



CONSTRUCTION SPECIFICATIONS

1. FENCE POSTS SHALL BE A MINIMUM OF 36" LONG DRIVEN 16" MINIMUM INTO THE GROUND. WOOD POSTS SHALL BE 11/2" X 11/2" SQUARE (MINIMUM) CUT, OR 13/4" DIAMETER (MINIMUM) ROUND AND SHALL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHTING NOT LESS THAN 1.00 POND PER LINEAR FOOT.
2. GEOTEXTILE SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:

TENSILE STRENGTH	50 LBS/IN (MIN.)	TEST: MSMT 509
TENSILE MODULUS	20 LBS/IN (MIN.)	TEST: MSMT 509
FLOW RATE	0.3 GAL FT^2/ MINUTE (MAX.)	TEST: MSMT 322
FILTERING EFFICIENCY	75% (MIN.)	TEST: MSMT 322

3. WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.
4. SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND MAINTAINED WHEN BULGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHED 50% OF THE FABRIC HEIGHT.

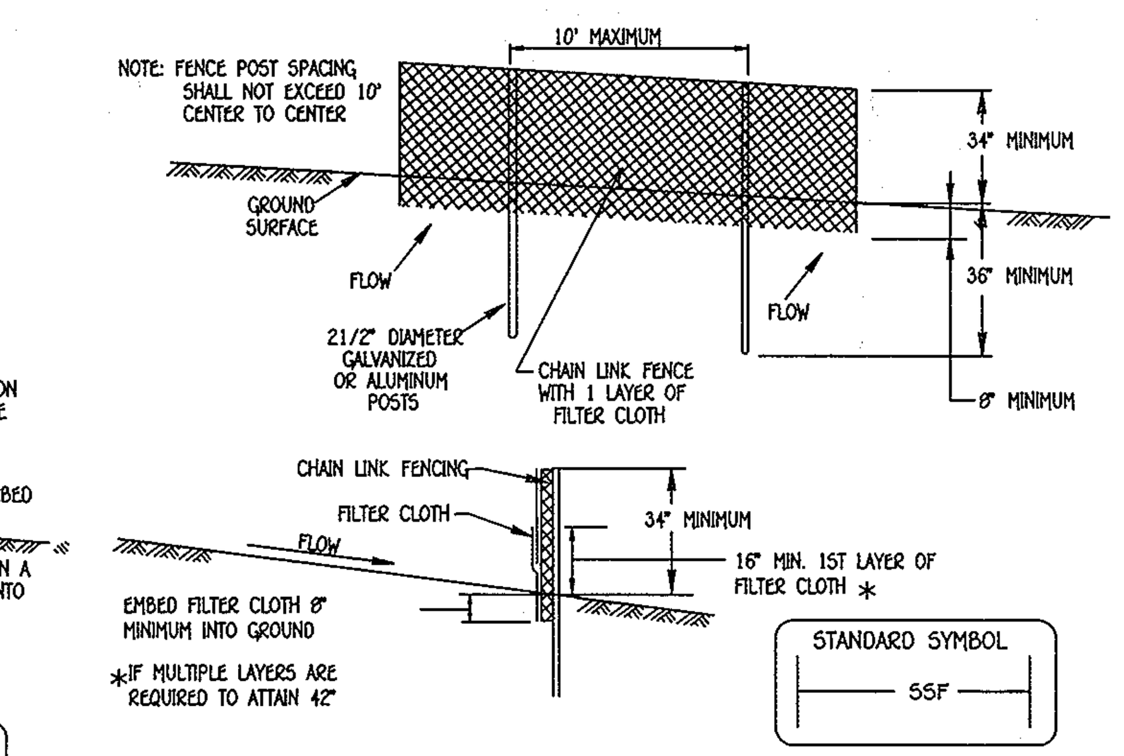
SILT FENCE DESIGN CRITERIA

SLOPE STEEPNESS	(MAXIMUM) SLOPE LENGTH	(MAXIMUM) SILT FENCE LENGTH
FLATTER THAN 50:1	UNLIMITED	UNLIMITED
50:1 TO 10:1	125 FEET	1,000 FEET
10:1 TO 5:1	100 FEET	750 FEET
5:1 TO 3:1	60 FEET	500 FEET
3:1 TO 2:1	40 FEET	250 FEET
2:1 AND STEEPER	20 FEET	125 FEET

NOTE: IN AREAS OF LESS THAN 2% SLOPE AND SANDY SOILS (USDA GENERAL CLASSIFICATION SYSTEM, SOIL CLASS A) MAXIMUM SLOPE LENGTH AND SILT FENCE LENGTH WILL BE UNLIMITED. IN THESE AREAS A SILT FENCE MAY BE THE ONLY PERIMETER CONTROL REQUIRED.

SILT FENCE

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. FENCING SHALL BE 42" IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATION FOR A 6' FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 6' LENGTH POSTS.
2. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE.
3. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MID SECTION.
4. FILTER CLOTH SHALL BE EMBEDDED A MINIMUM OF 8" INTO THE GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUILDUPS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR WHEN SILT REACHES 50% OF FENCE HEIGHT
7. FILTER CLOTH SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:

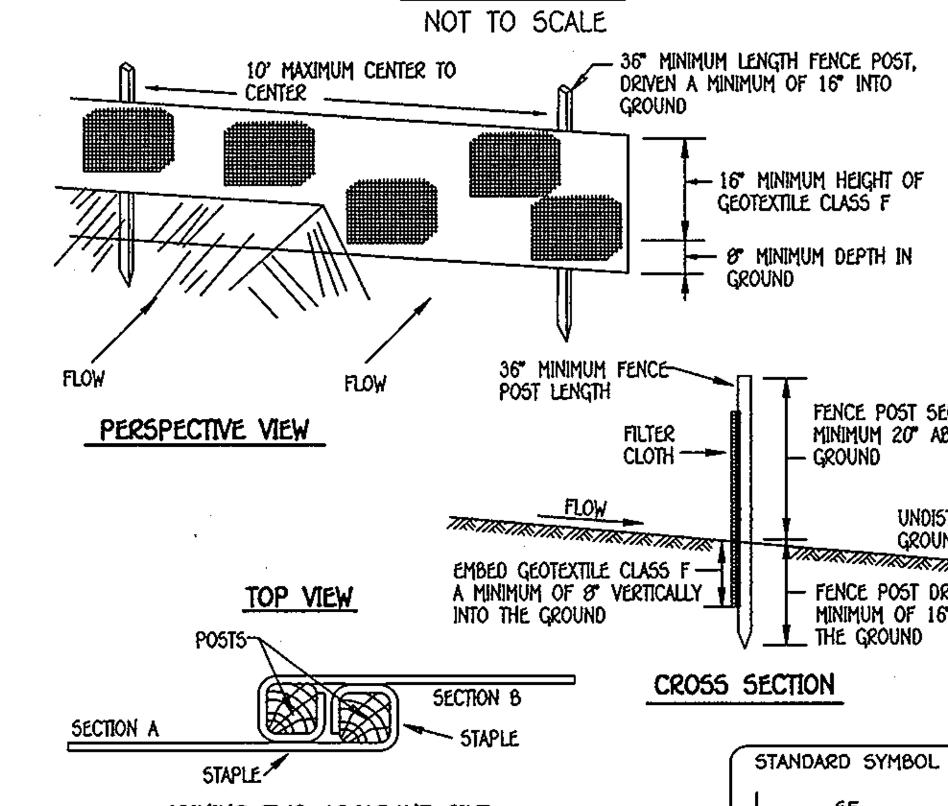
TENSILE STRENGTH	50 LBS/IN (MIN.)	TEST: MSMT 509
TENSILE MODULUS	20 LBS/IN (MIN.)	TEST: MSMT 509
FLOW RATE	0.3 GAL/FT^2 /MINUTE (MAX.)	TEST: MSMT 322
FILTERING EFFICIENCY	75% (MIN.)	TEST: MSMT 322

DESIGN CRITERIA

SLOPE	SLOPE STEEPNESS	SLOPE LENGTH (MAXIMUM)	SILT FENCE LENGTH (MAXIMUM)
0 – 10%	0 – 10:1	UNLIMITED	UNLIMITED
10 – 20%	10:1 – 5:1	200 FEET	1,500 FEET
20 – 33%	5:1 – 3:1	100 FEET	1,000 FEET
33 – 50%	3:1 – 2:1	100 FEET	500 FEET
50% +	2:1 +	50 FEET	250 FEET

SUPER SILT FENCE

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. FENCE POSTS SHALL BE A MINIMUM OF 36" LONG DRIVEN 16" MINIMUM INTO THE GROUND. WOOD POSTS SHALL BE 11/2" X 11/2" SQUARE (MINIMUM) CUT, OR 13/4" DIAMETER (MINIMUM) ROUND AND SHALL BE OF SOUND QUALITY HARDWOOD. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHTING NOT LESS THAN 1.00 POND PER LINEAR FOOT.
2. GEOTEXTILE SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:

TENSILE STRENGTH	50 LBS/IN (MIN.)	TEST: MSMT 509
TENSILE MODULUS	20 LBS/IN (MIN.)	TEST: MSMT 509
FLOW RATE	0.3 GAL FT^2/ MINUTE (MAX.)	TEST: MSMT 322
FILTERING EFFICIENCY	75% (MIN.)	TEST: MSMT 322

3. WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.
4. SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND MAINTAINED WHEN BULGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHED 50% OF THE FABRIC HEIGHT.

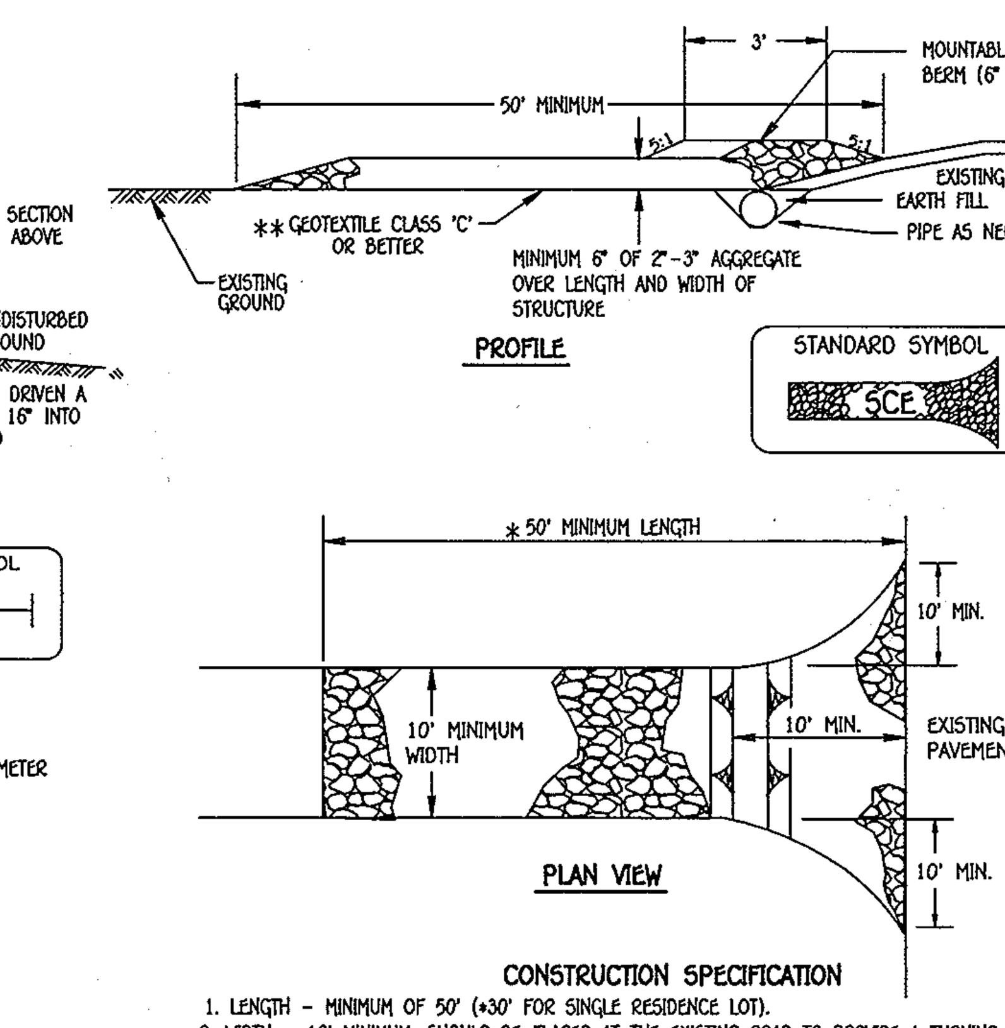
SILT FENCE DESIGN CRITERIA

SLOPE STEEPNESS	(MAXIMUM) SLOPE LENGTH	(MAXIMUM) SILT FENCE LENGTH
FLATTER THAN 50:1	UNLIMITED	UNLIMITED
50:1 TO 10:1	125 FEET	1,000 FEET
10:1 TO 5:1	100 FEET	750 FEET
5:1 TO 3:1	60 FEET	500 FEET
3:1 TO 2:1	40 FEET	250 FEET
2:1 AND STEEPER	20 FEET	125 FEET

NOTE: IN AREAS OF LESS THAN 2% SLOPE AND SANDY SOILS (USDA GENERAL CLASSIFICATION SYSTEM, SOIL CLASS A) MAXIMUM SLOPE LENGTH AND SILT FENCE LENGTH WILL BE UNLIMITED. IN THESE AREAS A SILT FENCE MAY BE THE ONLY PERIMETER CONTROL REQUIRED.

SUPER FENCE DIVERSION

NOT TO SCALE



CONSTRUCTION SPECIFICATION

1. LENGTH – MINIMUM OF 50' (*30' FOR SINGLE RESIDENCE LOT).
2. WIDTH – 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
3. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE. **THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY RESIDENCES TO USE GEOTEXTILE.
4. STONE – CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.
5. SURFACE WATER – ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED.

LOCATION – A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK – 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 – 2855

NO.	REVISION	DATE

ENGINEER'S CERTIFICATE

"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

[signature] Signature of Engineer EARL D. COLLINS — 4-22-13 Date

BUILDER/DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan, for sediment and erosion control and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

[signature] Signature of Developer — 4/19/13 Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

[signature] Howard Soil Conservation District — 4/25/13 Date

BUILDER

PATAPSCO BUILDERS, LLC
5300 DORSEY HALL DRIVE
SUITE 120
ELLICOTT CITY, MARYLAND 21042
240375-1052

OWNER/DEVELOPER

MR. KHANH Q. LY
2470 TRAILING IVY WAY
BUFORD, GA.30519
ARKHANH@BELLSOUTH.COM
701-841-2409

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[signature] Chief, Division of Land Development — 5/14/13 Date
[signature] Chief, Development Engineering Division — 5/10/13 Date
[signature] Director – Department of Planning and Zoning — 5/14/13 Date

0' 30' 60' 120'
SCALE: 1" = 30'

SEDIMENT AND EROSION CONTROL NOTES & DETAILS

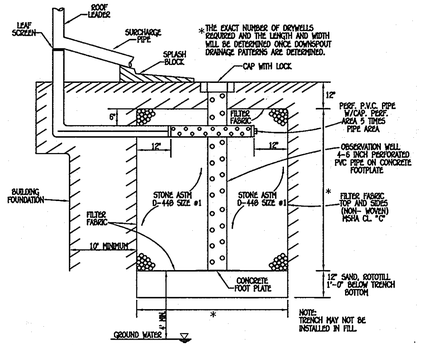
SINGLE FAMILY DETACHED

TANG PROPERTY

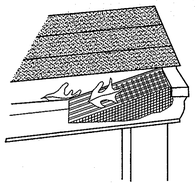
LOTS 1 THRU 4

TAX MAP NO.: 37 PARCEL NO.: 217 GRID NO.: 1
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: FEBRUARY, 2013

SDP 13-025



DRY WELL DETAIL (M-5)
NOT TO SCALE



GUTTER DRAIN FILTER DETAIL
NOT TO SCALE

STORMWATER MANAGEMENT NOTES

1. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH WITH CHAPTER 5, "ENVIRONMENTAL SITE DESIGN" OF THE 2007 MARYLAND STORMWATER MANAGEMENT DESIGN MANUAL, EFFECTIVE MAY 4, 2010.
2. MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE 1,000 SQ. FT. OR LESS.
3. DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH OF DISCONNECTION IS LESS THAN 75' AT 5%. THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH THE DETAIL SHOWN ON THIS SHEET.
4. FINAL GRADING IS SHOWN ON THIS SITE DEVELOPMENT PLAN.

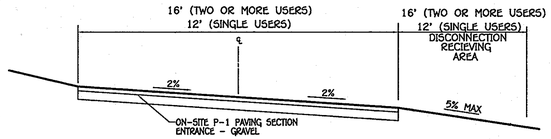
OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DRY WELLS (M-5)

A. THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
B. THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO ENSURE TRENCH DRAINAGE.
C. THE OWNER SHALL MAINTAIN A LOG BOOK TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
D. WHEN THE FACILITY BECOMES CLOGGED SO THAT IT DOES NOT DRAIN DOWN WITHIN A SEVENTY-TWO (72) HOUR TIME PERIOD, CORRECTIVE ACTION SHALL BE TAKEN.
E. THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
F. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION FACILITY HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

DRY WELL CHART					
DRYWELL NO.	AREA OF ROOF PER DOWN SPOUT	VOLUME REQUIRED	VOLUME PROVIDED	AREA OF TREATMENT	*L x W x D
1	500 SQ. FT.	30 C.F.	32 C.F.	100%	5' x 5' x 4'
2	500 SQ. FT.	50 C.F.	56 C.F.	100%	7' x 5' x 4'
3	500 SQ. FT.	40 C.F.	40 C.F.	100%	5' x 5' x 4'
4	500 SQ. FT.	86 C.F.	90 C.F.	100%	8' x 7' x 4'
5	500 SQ. FT.	45 C.F.	48 C.F.	100%	6' x 5' x 4'
6	500 SQ. FT.	30 C.F.	32 C.F.	100%	5' x 5' x 4'
7	500 SQ. FT.	50 C.F.	56 C.F.	100%	7' x 5' x 4'

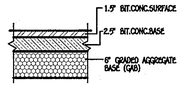
OPERATION & MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED, DISCONNECTION OF NONROOFTOP RUNOFF (N-2)

1. MAINTENANCE OF AREAS RECEIVING DISCONNECTION RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

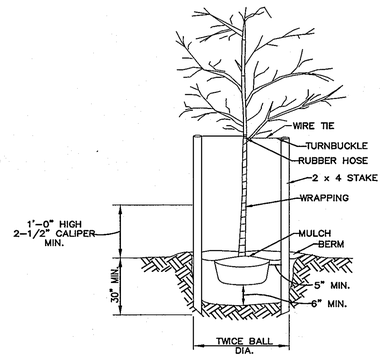


NOTE:
ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION.

TYPICAL PRIVATE DRIVE CROSS SLOPE SECTION
NOT TO SCALE

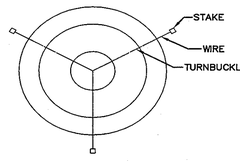


P-1 DRIVEWAY PAVING SECTION
NOT TO SCALE

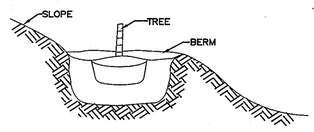


NOTE: REMOVE BURLAP FROM TOP 1/3 OF BALL

TREE PLANTING
NOT TO SCALE



STAKING DETAIL
NOT TO SCALE



GRADING FOR PLANTING ON SLOPES
NOT TO SCALE

OPERATION & MAINTENANCE SCHEDULE FOR MICRO-BIORETENTION (M-6)

A. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.
B. THE OWNER SHALL PERFORM A PLANT IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS AND REPLACE ALL DEFICIENT STAKES AND WIRES.
C. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
D. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

SWM SUMMARY CHART			
AREA ID	ESDv REQ. cu.ft.	ESDv Prd. cu.ft.	REMARKS
LOT 1	215	280	MICRO-BIORETENTION (M-6) & DRYWELLS (M-5)
LOT 2	218	238	MICRO-BIORETENTION (M-6) & DRYWELLS (M-5)
LOT 3	217	256	MICRO-BIORETENTION (M-6) & DRYWELLS (M-5)
LOT 4	217	328	MICRO-BIORETENTION (M-6)
DRIVEWAYS	1142	1142	NON-ROOFTOP DISCONNECTION (N-2) WITH ADDITIONAL STORAGE IN THE FIVE (5) MICRO-BIO RETENTION FILTER SYSTEMS
TOTALS	2160	2250	

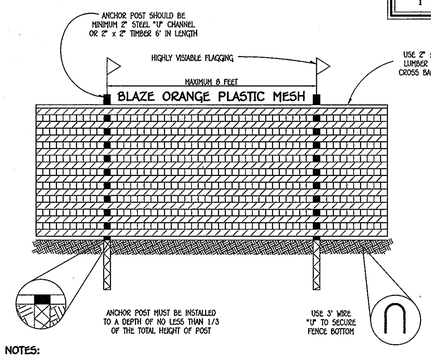
CALCULATE THE PE PROVIDED AS FOLLOWS:

PE PROVIDED = $\frac{ESDv \times 12}{Rv \times A}$ = $\frac{2250 \times 12}{0.24 \times (1.77\ acres)}$ = $\frac{27,000}{0.4248}$ = $\frac{63,560}{43,560}$ = 1.46" vs 1.4"

AS SUCH, 112% (1.34"/1.2") OF THE REQUIRED ESD VOLUME HAS BEEN PROVIDED.

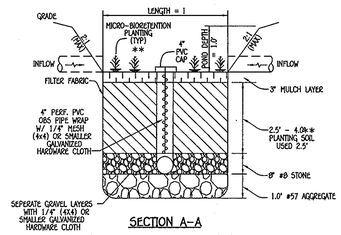
AREA = 1.77 ACRES
RCN = 57
TARGET PE = 1.4"

STORMWATER MANGEMENT PRACTICES				
LOT NO.	ADDRESS	DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2) Y/N	DRYWELLS (M-5) NUMBER	MICRO BIO-RETENTION (M-6) NUMBER
LOT 1	5202 TANG PLACE	Y	3	1
LOT 2	5206 TANG PLACE	Y	2	1
LOT 3	5209 TANG PLACE	Y	2	1
LOT 4	5205 TANG PLACE	Y	N/A	2
SHARED DRIVEWAY	N/A	Y	N/A	N/A

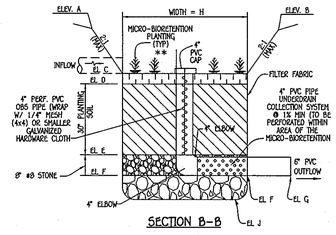


NOTES:
1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION DETAIL
NOT TO SCALE

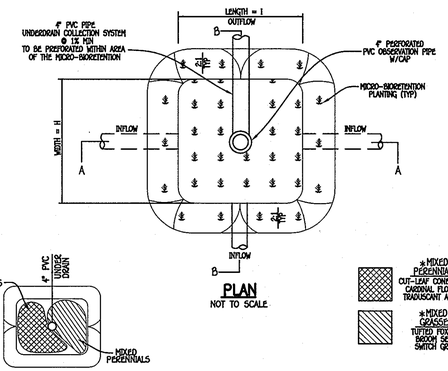


SECTION A-A



SECTION B-B

MICRO-BIORETENTION DETAIL (M-6)
NOT TO SCALE



PLAN
NOT TO SCALE

*MIXED PERENNIALS
CUT-LEAF CONEFLOWER
CARDINAL FLOWER
TRADUSCANT ASTER

*MIXED GRASSES
TUFTED FESCUE
BROOM SEDGE
SWITCH GRASS

MICRO-BIORETENTION PLANTING DETAIL
NOT TO SCALE

*SEE PLANT MATERIAL CHARTS FOR QUANTITIES AND SPACING

NOTE:
PLANT MATERIAL MUST COVER AT LEAST 50% OF THE SURFACE AREA OF THE MICRO-BIORETENTION

MICRO-BIORETENTION PLANT MATERIAL		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
75	MIXED PERENNIALS	1 FT.
78	MIXED GRASSES	1 FT.
1	SILKY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION

MICRO-BIORETENTION										
BIORETENTION FILTER	A	B	C	D	E	F	G	H	I	J
1	484.00	484.00	483.00	482.75	480.25	479.58	480.00	8'	8'	470.58
2	488.00	488.00	487.00	486.75	484.25	483.58	483.00	8'	8'	482.58
3	476.00	476.00	475.00	474.75	472.25	471.58	471.00	10'	10'	470.58
4	470.00	470.00	469.00	468.75	466.25	465.58	465.35	10'	10'	464.58
5	470.00	470.00	469.00	468.75	466.25	465.58	465.30	7'	7'	464.58

SOILS LEGEND

SOIL	NAME	CLASS
AgB2	Aura gravelly loam, 1 to 5 percent slopes, moderately eroded	B
AgC2	Aura gravelly loam, 5 to 10 percent slopes, moderately eroded	B
AgE3	Aura gravelly loam, 10 to 30 percent slopes, severely eroded	B
** BeB2	Beltsville silt loam, 1 to 5 percent slopes, moderately eroded	C
SlC2	Sassafras loam, 5 to 10 percent slopes, moderately eroded	B
SlD2	Sassafras loam, 10 to 15 percent slopes, moderately eroded	B
** WaA	Watchung silt loam, 0 to 3 percent slopes	D

NOTES:
* Hydric soils and/or contains hydric inclusions
** May contain hydric inclusions
† Generally only within 100-year floodplain areas

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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NO.	REVISION	DATE

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Signature of Engineer — EARL D. COLLINS — 4.22.13 Date

BUILDER/DEVELOPER'S CERTIFICATE

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Signature of Developer — 4/6/10 Date

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 9753, EXPIRATION DATE: 2/28/12.

EARL D. COLLINS — 4.22.13 DATE

BUILDER
PATAPSCO BUILDERS, LLC
5300 DORSEY HALL DRIVE
SUITE 120
ELLICOTT CITY, MARYLAND 21042
240375-1052

OWNER/DEVELOPER
MR. KHANH Q. LY
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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — 5/14/13 Date
Chief, Development Engineering Division — 4/10/13 Date
Director - Department of Planning and Zoning — 5/14/13 Date

STORMWATER MANAGEMENT NOTES & DETAILS
LANDSCAPING DETAILS

SINGLE FAMILY DETACHED
TANG PROPERTY
LOTS 1 THRU 4

TAX MAP NO.: 37 PARCEL NO.: 217 GRID NO.: 1
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: FEBRUARY, 2013
SHEET 4 OF 4

SDP 13-025

I:\2005\05086\dwg\Site Development Lots 1-4\05086 SWM DETAILS Lots 1-4 SHT 4.dwg, Model, 4/19/2013 1:03:30 PM